

# Tree/Shrub Establishment

## Conservation Practice Job Sheet

612



### Definition

Tree and shrub establishment involves planting permanent woody vegetation for reforestation or afforestation purposes. Planting stock may include: bare-root seedlings, balled and burlapped plants (B&B), potted seedlings, containerized seedlings, cuttings, whips or poles. Natural regeneration from seeds, stump sprouts, suckers or seedlings is another option of establishing woody vegetation.

### Purpose

There are many purposes for planting trees and shrubs. Establishing a new forest, defined as afforestation; or replanting or replacing a forest after a harvest, defined as reforestation. Where the wood will be used for timber, lumber, veneer or firewood are common purposes for planting trees and shrubs. However, landowners often have more than one purpose for planting woody plants. Enhancing aesthetics such as after a forest stand improvement, creating or improving wildlife habitat and restoring natural diversity provide additional benefits from tree planting. Economic benefits such as carbon sequestration (for selling or trading credits), energy crops,

biomass production and products from trees and shrubs are valid reasons to plant woody stock. Non-timber forest products may include fruits, pinecones, branches, bark, resins, nuts, arts and crafts hobbies, medicinals and aromatics. Trees and shrubs also provide long-term environmental benefits such as erosion control, soil stabilization and water quality improvement.

### Where used

Tree and/or shrub plantings can be implemented on any appropriately prepared site where woody plants can be successfully established. As long as the soils are capable of supporting the growth of trees or shrubs there are a multitude of suitable species that can be planted almost anywhere for almost any reason.

### Resource management system

The tree and shrub establishment practice is often a part of a resource management system (RMS) for a conservation management unit. For example, tree/shrub establishment combined with wetland restoration and wildlife habitat establishment will act together to enhance or

improve habitat for wildlife; such as forest interior birds, or native bat populations, or other pollinators. Other practices for an RMS may include tree/shrub site preparation, forest stand improvement, prescribed burning or water control structures.

## Wildlife

For plantings to function properly, access by livestock and certain wildlife must be managed year-round (access control and fencing for at least the first 3 to 5 years after planting). Connecting woody forest plantings with existing or planned wildlife corridors or riparian areas (riparian forest buffer), provides additional benefits for wildlife and aesthetics. Select native or adapted species that provide wildlife food or cover. Refer to the Tree/Shrub Establishment Practice Standard (612) and Specifications Sheet for information about suitable species.

## Operation and maintenance

Trees and shrubs established for afforestation or reforestation projects need periodic maintenance and, as they mature, renovation activities such as pruning or forest stand improvement. In arid areas trees or shrubs may need supplemental water or the use of water-harvesting techniques for successful establishment.

## Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See NRCS Conservation Practice Standard Tree/Shrub Establishment, Code 612 for more information.



White pine (*Pinus strobus*) stand regenerating from seed trees following a shelterwood cut.  
Itasca County, MN.

## Tree/Shrub Establishment – Job Sheet

Landowner \_\_\_\_\_ Field number \_\_\_\_\_

**Landowner objective(s):** Be as specific as possible

**Primary purpose: (From the list below: What is the primary purpose of the establishment? Check one)**

- |  |   |
|--|---|
| <input type="checkbox"/> Forest products such as timber, pulpwood or biomass     | <input type="checkbox"/> Wildlife habitat establishment |
| <input type="checkbox"/> Long-term erosion control and water quality improvement | <input type="checkbox"/> Treating waste                 |
| <input type="checkbox"/> Storing carbon in biomass                               | <input type="checkbox"/> Energy conservation            |
| <input type="checkbox"/> Improving or restoring natural diversity                | <input type="checkbox"/> Enhancing aesthetics           |

**Secondary Purpose (check all that apply)**

- |  |   |
|--|---|
| <input type="checkbox"/> Forest products such as timber, pulpwood or biomass     | <input type="checkbox"/> Wildlife habitat establishment |
| <input type="checkbox"/> Long-term erosion control and water quality improvement | <input type="checkbox"/> Treating waste                 |
| <input type="checkbox"/> Storing carbon in biomass                               | <input type="checkbox"/> Energy conservation            |
| <input type="checkbox"/> Improving or restoring natural diversity                | <input type="checkbox"/> Enhancing aesthetics           |

### Current Conditions

Summarize the current conditions that are negatively impacting the priority resource concern(s). Attach any maps, models, calculations, and other supporting information, as appropriate, to support the summary:

### Future Desired Conditions

Summarize the future desired conditions that the recommended practices will create:

### Layout for linear plantings

Width (feet; include width of maintenance areas if any):

Length (feet): \_\_\_\_\_ Acres

Additional information:

Attach map

### Soils Information

County:

Soil Map Units:

SMU:

SMU:

SMU:

CTSG:

CTSG:

CTSG:

CTSG:

### Species, Stock Type and Planting Rates

Record the location of Row 1:	Size, Caliper&Height and/or age	Kind of stock <sup>1</sup> :	Distance between plants within row (ft):	Total number of plants for row:	Distance between adjacent rows <sup>2</sup> : (ft)
Species/cultivar by row number:					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

<sup>1</sup>Bare-root, Container (includes potted, and B&B), Cutting (including whips, poles and stakes) Plug, Potted; include size, caliper, height, and age as applicable.

<sup>2</sup>Adjusted for width of maintenance equipment for mature plants.

### Seeds for Direct Seeding and Aerial Seeding

- ☐ Direct Seeding (use lbs/Ac or BU/Ac)  
☐ Aerial Seeding (use oz/Ac)

Species	lbs/Ac or BU/Ac or oz/Ac

Natural Regeneration – Afforestation Regeneration	
List seed bearing trees	
Riparian Areas (w/in 200 feet upwind of site)	Non-floodplain Areas (w/in 300 feet on at least 2 sides)

Natural Regeneration - Reforestation		
By suckering	By stump sprouting	By prescribed fire
Species:	Species:	Species:

Temporary Storage
Place stock in cold storage (33° - 40° F) if not planting immediately. On-site place stock in cool shaded location, protected from the wind and sun. Do not allow stock to freeze or heat up. If stock must be stored more than two weeks, heel-in stock in a trench located in a shaded, protected area. Additional requirements:
Site Preparation
Follow guidelines in NRCS Conservation Practice Standard Tree/Shrub Site Preparation, Code 490. Additional requirements:
Temporary/Permanent Conservation Cover
Choose from the plants listed in the Specifications Sheet. Use the form MN-CPA-003 for the seeding plan. Additional requirements:
Supplemental Moisture
Follow guidelines in NRCS Conservation Practice Standards Mulching, Code 484 or Irrigation System, Sprinkler, Code 442. Additional requirements:
Operation and Maintenance
Follow the Operation and Maintenance Plan. Inspect tree/shrub planting periodically. Note storm damage or symptoms of insects or disease injury. Protect and repair tree/shrub planting so proper function is maintained. Replace dead or dying tree/shrub stock and continue control of competing vegetation for at least 3 years after planting to allow adequate establishment. The tree/shrub planting will also be protected from livestock and wildlife damage by the use of fencing, repellents, bud caps, tree tubes/shelters or other protective devices. Refer to Technical Note 44 "Reducing Deer Browse Damage" if necessary. Properly install and maintain weed control fabric (if used) so that girdling of stems is avoided. Prune dead or dying branches to maintain function by using Practice Standard Tree/Shrub Pruning (660), Forest Stand Improvement (666) or Windbreak/Shelterbelt Renovation (650) as appropriate. Additional requirements:

If needed, an aerial view or a side view of the practice can be shown below. Or attach the form MN-ECS-002 Tree/Shrub Planting Plan and/or an aerial photograph. Other relevant information, complementary practices and measures, and additional specifications may be included.

Scale 1"= \_\_\_\_\_ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")


Additional Specifications and Notes:

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## OPERATION AND MAINTENANCE PLAN

### Tree Planting

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Location: Tract: \_\_\_\_\_

Assisted by: \_\_\_\_\_

You, as owner or land user, are responsible for the protection and maintenance of the Tree/Shrub Establishment (612) planting. The following guidelines were developed by the Natural Resources Conservation Service to assist you with required maintenance activities. The following actions shall be carried out to insure that this practice functions as intended throughout its expected life without the expectation of additional program payments. The life of this practice is 15 years. These actions include normal repetitive activities in the application and use of the practice (operation) and repair and upkeep of the practice (maintenance).

1. Inspect tree plantings at least annually and replace or replant seedlings until desired stand density is established. Perform additional inspections after damaging events such as wind and hail storms, drought or flood, pesticide drift from adjacent crop fields, or insect and disease outbreaks. Refer to Table 5 under the section General Criteria-Survival Rates and Establishment for more guidance on criteria to re-establish plantings. Costs associated with replanting will be the landowner's responsibility and are considered part of normal Operation and Maintenance that is covered under the contract provisions.
2. Use the Practice Standard Tree/Shrub Pruning (660) as necessary to maintain a single leader particularly on linear plantings. Pruning should be limited to maintaining single leaders, removing broken, dead or diseased branches and promoting an upright form. Do not prune lower limbs that are alive, only remove dead limbs. Prune deciduous branches when interfering with conifers. Pruning should be performed when trees are not actively growing and when risks from insect and fungal damage are low.
3. Develop and implement a pest control plan the year of planting and during the establishment period. Competition will be controlled during the establishment period using one or a combination of the following methods (see your planting plan):
  - a. All noxious weeds will be controlled as required by state and local laws.
  - b. If using chemicals to control weeds follow the guidelines in the practice standard Integrated Pest Management (595). Spot treatment with mowing or pesticides will be done before seed heads are formed.
  - c. To mechanically control broadleaf weeds and grass mow or cultivate between the tree rows. If tillage is used, keep equipment shallow to reduce root damage to the trees. To avoid soil compaction, do not use tillage equipment on wet soils.
  - d. For insect and disease outbreaks follow the guidelines in the practice standards Integrated Pest Management (595), Tree/Shrub Pruning (660) and/or Forest Stand Improvement (666).
4. If nutrients are to be applied follow the Practice Standard Nutrient Management (590).
5. Protect the tree planting from damage by vehicular traffic, livestock, rodents, browsing animals and wild fires. Protect the terminal leader from browsing on all conifer seedlings by bud capping or applying chemical repellants until the leader is 6 feet tall. Repellents, poisons, fencing, tubing or shelters, netting and cages of various kinds can be used to control access, rodent, livestock and wildlife damage. Refer to Access Control (472) for more information. To protect the planting from wild fire damage, refer to Firebreak (394).
6. Follow the guidelines in the appropriate practice standards to control erosion such as: Grassed Waterway (412), Critical Area Planting (342), Diversion (362), Structure for Water Control (587) or another appropriate practice.
7. If thinning or release is recommended follow the guidelines in the Practice Standard Forest Stand Improvement (666). Forest stand improvement activities will not cause excessive soil erosion, compaction, rutting or damage to crop trees.

Operator \_\_\_\_\_

Date \_\_\_\_\_